[Irish Beggars.]

THE IRISH CLOAK.—No. II.

Amongst the poorer classes it may be seen one cloak does duty for all the females of the family, as you meet with it worn in every way: the tallest wear it as the tailor fashioned it to be worn; the middle-sized place the part on the head which was intended to rest on the shoulder, allowing the hood to fall back like the Turkish caftan; this is in general very graceful, as the great width of the material allows the folds to fall large and flowing. The children all seem to have the power of using it in different ways; those even of four or five years old, to whom a cloak seems as indispensable as to the elders, are so completely enveloped in its folds as to be nearly lost in them. The boys play the same game with the cloaks and great coats of their fathers, for the dress of the men at the present day is departing considerably from the form of the national cloak, and may rather be described as a great coat with many capes. Ireland is also one of the great markets for old clothes collected in England—you meet with the faded garments of a former day in every direction; and hence the English fashions are beginning to preponderate. A few years ago the camlet cloaks with red collars and facings, then fast going out of fashion here, seemed in great favour with the Irish, who appear to have thought one insufficient, as it was not uncommon to see a man without shoes, or stockings, or waistcoat, with two of these cloaks over his ordinary coat, and with all their accumulation of capes, sometimes from two to three on each cloak. In England the first care is to secure the feet and chest from cold or damp—this never seems to trouble an Irishman, as you may see a man patiently driving a pig with his shoes in his hand, no cravat, but with his shirt-collar open, the rain pelting on his face and naked chest; when a button fastened on any one of the six capes on his back, where they are not wanted, would make him comfortable—he never seems to think of it: it would appear to a stranger that the knees of his breeches were left unbuttoned in order to allow the rain, after washing his face and chest, a clear passage down his legs. He carries this accumulation of clothes *on his back* equally in summer and in winter.

The Irish beggar is altogether a distinct class, and must not be confounded with the vagabond of England, who is generally a beggar only because he is too lazy or too depraved to labour; in Ireland it is not so—the man who from choice or from necessity turns beggar, becomes a member of a new community, which by no means impeaches his respectability; he forfeits nothing, but preserves his caste intact, and in consequence holds up his head as proudly as if he were a

man-at-arms, very different from the wolf-like aspect of an English *professional* beggar, who if not a thief at the outset, of necessity, from his association with those beyond the pale of society, soon becomes one. The Irish beggar has a home in every man's shed, a shelter at every man's hearth, and a potato in every man's pot; like the Scottish gaberlunzie, he is a species of herald, the bearer of news when no written language could be interpreted—the manager of intrigues, and equally the messenger of the harmless lover and the dangerous conspirator, he is in fact a recognised member of society, moving in a certain orbit, performing his functions, and entitled by right as well as by courtesy to his reward. The Irish beggar has been celebrated for his wit, his *'cuteness:* we have little faith in this—all communities with plenty of time on their hands have their joint-stock of good things, to be used on occasion;—the soldier, the sailor, the lawyer, the doctor, and the divine—the conductor of an English omnibus, equally with the Irish car-driver, has a traditional property in the jokes of his forefathers—the Irish beggar is similarly situated, he is always the attacking party, he makes his occasion, and he has his joke ready to fit it; but the matter is of the antient fabric, and in all likelihood the first "good thing" you meet on the quay at Kingstown was the last you heard or read on embarking at Liverpool. The test lies in the manner, which is striking and new to an Englishman, from its open and familiar delivery, unlike what he has heard from such a person, and arising from that person's not being ashamed of his position—he is not offended at a refusal, or at the failure of his joke to extract a fee for himself, but turns round in aid of a new applicant more needy or deserving than himself with as much earnestness as if he had received a fee for his assistance; and so they go on, till at last, getting desperate, they bring forward the most affecting instance on the roll, and all seem gratified if at length they succeed in securing anything to any one of the party. This was the case with the group at the head of this paper. The mail to Bantry stopped at Bandon, at the time suffering from a depression in the manufacture of twine, and after all the ordinary applicants had been disposed of, the old blind woman led by her grandchild was pointed out; the child, having by a look attracted our eye to the old woman, held up her apron, or something that did duty for one, and saying *In the name of God!* received the trifle, and thanked us with a burst of grateful eloquence none but an Irish tongue could equal; in this quality certainly there can be no question of their preeminence.

ECONOMICAL USES OF THE WILLOW.

Of all the plants which grow in this country, there is perhaps not one applied to a greater variety of uses than the *Willow*. Others may be and are more important, but for diversity of application the willow is really remarkable.

The term 'willow' is applied to two plants so apparently dissimilar, that it may not be known to every one that they are species of one genus. The willow-tree, and the willows or osiers used in basket-making, are the two kinds to which we here allude; and indeed we can hardly speak thus of *two* kinds, for the genus has been so divided and subdivided, that it contains, according to Sir J. E. Smith's classification, about a hundred and forty species; according to Schleicher, two hundred and fifty; and according to Koch, two hundred and fifty-four. The willows are chiefly natives of the colder parts of the temperate regions of the northern hemisphere, and of a cold moist soil. A few species have been met with in Armenia, in China and Japan, in Northern India, in North Africa, in Central America, and in North America, but the temperate countries of Europe are those in which the willow is most extensively found.*

The 'white willow,' or timber-willow, the ornamental or 'weeping willow,' and the osier-willow, may be taken as three types towards which all the species more or less approximate, and these grow to various heights, from one hundred feet down to that of a mere shrub. The nature of the uses to which they are applied by man, depends partly on this broad classification, and partly on properties which the varieties enjoy in common; and Mr. Loudon, in his 'Arboretum Britannicum,' has given such an emuneration of these uses as justifies the remark of Sir W. J. Hooker, that "the many important uses rendered to man by the different species of willow and osier, serve to rank them among the first in our list of economical plants."

In a state of nature the willow furnishes food by its leaves to the larvæ of moths, gnats, and certain other insects; and, by its flowers, to the honey-bee. The leaves and young shoots are wholesome and nourishing to cattle; and in some northern countries they are collected green, and then dried and stacked for that purpose. In France the leaves and young shoots of one species, whether in a green or dried state, are considered the very best food for cows and goats; and horses, in some places, are fed entirely on them from the end of August till November; the horses so fed are said to be able to travel twenty leagues a day without fatigue. In Sweden, Norway, and Lapland the inner bark is kiln-dried and ground, for the purpose of mixing with oatmeal in years of scarcity. In a rude state of civilization the twigs of the willow were used in constructing houses, household utensils, panniers, harness, boats, fishing-tackle, &c. The twigs are still very generally applied in Russia and Sweden to all these uses; and Dr. Walker, who wrote an essay on willows about forty years ago, states that he has ridden in the Hebrides with a bridle made of twisted willow-twigs, and lain all night at anchor with a cable made of the same material.

The bark is usefully applied in many ways. The peasants of Russia and of the adjacent cold countries weave the bark of the young shoots for the upper parts of their shoes, the outer bark serving for the soles; and they also make of it, tied together with strips of the inner bark, baskets and boxes for domestic purposes. The outer bark of old trees supplies them with a substitute for tiles as a covering for their cottages. In Tartary the bark is steeped in water, and the fibre, when separated, spun into threads from which cloth is woven. Both the bark and the leaves of the willow are astringent, and the former is sometimes employed in tanning; the bark of one species is also used for dyeing black, in some of the cold countries of Europe. The bark of the willow has been brought into requisition as a medicinal agent, by yielding a substance called *salicine;* this was discovered by M. Leroux, and has been found very valuable as a cure for agues and low fevers; Majendie states that he has known three doses of six grains each stop a fever. Salicine is in the form of very fine whitish crystals, perfectly soluble in water or alcohol, and very bitter; the process for obtaining it is long and difficult, and about three pounds of bark are required to produce one ounce of this valuable substance.

As a variety of timber, the wood of the larger species of willow presents many useful qualities. It is generally soft, smooth, and light; varying from about twenty-seven to forty-one pounds per cubic foot, the one somewhat under and the other somewhat over

* See article on 'The Willow,' in No. 649.

half the weight of water. In Pliny's time willow wood was in request for the fabrication of shields, on account of its lightness; and in the present day it is for the same reason preferred for making cutting-boards for the use of tailors and shoemakers. It is used for whetting the fine steel instruments of cork-cutters and other mechanics: it is in demand for turnery, for shoemakers' lasts, for imitating ebony when dyed black, and for many minor purposes. The wood of the larger trees is sawn into boards for flooring, and sometimes for rafters; in which situation, when kept dry and well ventilated, it has been known to last upwards of a century. The boards are well adapted for lining waggons and carts, particularly such as are intended for coals or stone, as this wood, from its softness, is not liable to splinter from the blow of any hard angular material. From its property of durability in water, willow-wood is valuable for the paddle-boards of steam-vessels, and for water-wheels. The red-wood willow is much used in Scotland for building small ships, and especially fast-sailing sloops-of-war, by reason of its lightness, pliancy, elasticity, and toughness. Mr. Mathew, in his 'Treatise on Naval Timber,' states, in reference to these properties of red-wood willow:—"Formerly, before the introduction of iron-hoops for cart-wheels, the external rim, or felloe, was made of thin willow; and when new, the cart or wain was drawn along a road covered with hard small gravel (and in preference, gravel somewhat angular); by which means the felloe shod itself with stone, and thus became capable of enduring the friction of the road for a long time, the toughness and elasticity of the willow retaining the gravel till the stone was worn away."

The stems, branches, shoots, and twigs are used in modes almost innumerable, either split or not according to circumstances. The straight stems of young trees, when split into two, make excellent styles for ladders, on account of their lightness. The longer shoots and branches are made into poles for fencing, hop-poles, props for vines, and other purposes; and when forked at one end, into 'clothes-props.' They are also much used for the handles of hay-rakes and other light agricultural implements; they are split, and made into hurdles, crates, and hampers; and, when interwoven with the smaller branches, into racks or cradles for the hay and straw given to cattle in the fields or feeding-yards. The shoots of some of the more vigorous kinds of willow, when cut down to the ground, produce in two years rods which admit of being split in two for hoops for barrels. In the neighhood of London the market-gardeners use the smaller shoots of some species for tying up brocoli, colewort, and other vegetables sent to market in bundles; while, both in this country and on the Continent, the smaller shoots of willows are used for tying the branches of trees to walls or espaliers, for tying up standard trees and shrubs into shape, for making skeleton frames on which to train plants in pots, and for tying bundles and packages. The smaller rods or shoots, with or without the bark on, are manufactured into various kinds of light and ornamental articles. At Caen in France, hats are manufactured from strips or shavings of the wood of the white-willow: branches of two or three years' growth are taken and cut up into thin slices, with an instrument called a 'shave,' and afterwards divided into ribands by a steel comb with sharp teeth. Similar willow hats were formerly manufactured in England. Sheets of woven material, called 'willow,' are made at the present day; they consist of a fabric woven with fine strips of willow-wood, subsequently stiffened: they are in common use for the framework of bonnets, and, when covered with felt or silk shag, for light cheap 'gossamer' or summer hats. These sheets of willow are said to be chiefly manufactured in Spitalfields, where one set of persons cut the willow into thin strips, and others weave these strips into sheets.

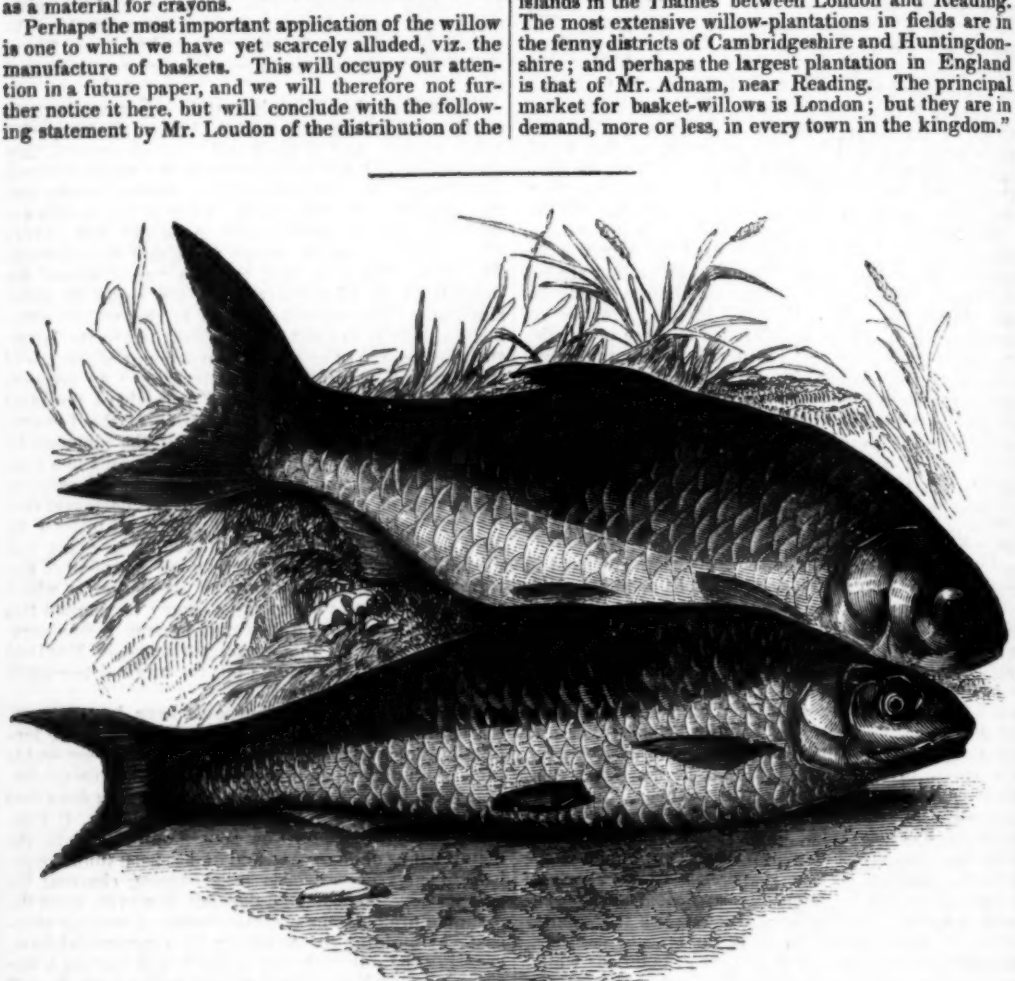
The downy substance which envelops the seeds of the willow is used by some kinds of birds to line their nests, and by man occasionally as a substitute for cotton in stuffing mattresses, chair-cushions, and for other similar purposes. In many parts of Germany this substance is collected for making wadding for lining ladies' winter dresses, and a coarse paper may be formed of it.

The willow plant in a whole state is in many respects ornamental, and in some useful. Almost all the species being aquatic, and of rapid and vigorous growth, they are peculiarly fitted for planting on the banks of rivers and streams, for restraining their encroachments and retaining the soil in its place. Some of the species are very valuable as coppice-wood, to be cut down every six or eight years for hoops, poles, and faggot-wood. The white-willow is said to be a 'good nurse' for plantations of timber-trees that are made in moist situations. The shrubby species of the willow make hedges, both in dry and in moist soil; but in the latter, such hedges are of most value on account of the use of their annual shoots in basket-making. As respects ornament, the 'weeping-willow' is perhaps the most graceful of the species. It is a native of the Levant; but it thrives very well in England, if the situation be not too cold, and if it be near water. It runs to a considerable height, and no tree can be more graceful on the margin of a lake or stream. It has been said that the first weeping-willow was planted in England by Alexander Pope, and that the motive for so doing was the following:—Pope, having received a present of figs from Turkey, observed a twig of the basket in which they were packed putting out a shoot; he planted this twig in his garden, and it in time became a fine tree. From this stock all the weeping-willows in England are reputed to have sprung; but the original tree itself was cut down a few years ago.

When all other useful purposes have been served, the willow serves as a substitute for coal. The loppings, branches, and old trunks make a most agreeable fuel, producing when dry a clear fire with little smoke. It is used, too, in a form which has been thus described in the 'Library of Entertaining Knowledge' ('Timber-Trees'):—"The willow is used extensively in the manufacture of charcoal; and it has been found superior to most other woods in producing charcoal for gunpowder. A good deal depends, however, upon the manufacture. In the ordinary modes of making charcoal—by building the wood up in a pyramidal form, covering the pile with clay or earth, and leaving a few air-holes, which are closed as soon as the mass is well lighted—combustion is imperfectly performed. For charcoal to be used in the manufacture of gunpowder, the wood should be ignited in iron cylinders, so that every portion of vinegar and tar which it produces should be suffered to escape. In India charcoal is manufactured by a particular caste, who dwell entirely in the woods, and have neither intermarriage nor intercourse with the Hindoo inhabitants of the open country. They bring down their loads of charcoal to particular spots, whence it is carried away by the latter people, who deposit rice, clothing, and iron tools—a payment settled by custom." In the time of Evelyn, willow appears, from a remark made in his 'Sylva,' to have been the principal wood employed in the manufacture of charcoal, both for smelting iron and for making gunpowder; and he expresses a fear that the extension of our iron manufacture would thus lead to the destruction of a vast number of beautiful forest-trees. But he could not then foresee that coal charred

into coke would in time be used as a substitute for wood converted into charcoal. This substitution has extended rapidly; so that while in the year 1788 twenty-six, out of eighty-six, iron furnaces in England were heated by charcoal, there were, in 1826, three hundred and five iron-furnaces all heated by coke. Willow-wood charcoal is highly esteemed by painters as a material for crayons.

Perhaps the most important application of the willow is one to which we have yet scarcely alluded, viz. the manufacture of baskets. This will occupy our attention in a future paper, and we will therefore not further notice it here, but will conclude with the following statement by Mr. Loudon of the distribution of the culture in England:—"The principal plantations of willows for basket-making in every country are made along the banks of rivers and streams; and in England those on the Thames and Cam are the most celebrated. In both these rivers, and in some others, small islands are frequently planted entirely with willows, and are called 'osier holts.' There are many such islands in the Thames between London and Reading. The most extensive willow-plantations in fields are in the fenny districts of Cambridgeshire and Huntingdonshire; and perhaps the largest plantation in England is that of Mr. Adnam, near Reading. The principal market for basket-willows is London; but they are in demand, more or less, in every town in the kingdom."



[Roach and Dace.]

THE ROACH AND THE DACE.

THESE two kinds of fish are in many respects alike in their habits, and do not very greatly differ from each other in appearance. "They be much of a kind," says Walton, "in matter of feeding, cunning, goodness, and usually in size." The dace, however, is longer, and not so broad as the roach, and its fins and eyes are of a less brilliant colour, but they both have a handsome silvery appearance. They are now classed by naturalists in the same genus, to which also belong the bleak and minnow, though the minnow differs somewhat from the typical characteristics of the others. Both roach and dace are gregarious, and the two species frequently congregate in the same river. The roach is more widely dispersed in the temperate parts of Europe than the dace, but in this country they are both very common. Roach prefer deep and quiet rivers, and will breed well in ponds; but dace love streams deep but clear, with a gentle current, and do not thrive so well in ponds. By day roach haunt deep water in and near beds of weeds, or under the shade of the trees which overhang the banks. Walton terms this fish the "water-sheep, for his simplicity or foolishness;" but several writers do not coincide with the venerated angler on this point. Roach-fishing, indeed, is excellent practice for beginners; and almost as much quickness and dexterity are required as in fly-fishing. To the more experienced even the fish affords excellent sport: Walton added, "especially the great roaches about London, where I think there be the best roach-anglers." Neither roach nor dace are in much esti-

mation for the table. Hawkins gives the preference to the dace, though it is no great things. They both make good bait for pike, the dace for his silvery whiteness, and the roach, being more tenacious of life as well, is used for night-hooks. Roach are in the best condition in October, and dace in February, though on this point there are different opinions. Both spawn at the end of May, or early in June, and recover their strength in about a fortnight afterwards. Roach ascend the upper parts of the Thames preparatory to spawning; and vast shoals leave Loch Lomond at the same season, and during three or four days are caught on their migration in large numbers. The dace seldom exceeds nine or ten inches in length, but the roach attains a larger size. Mr. Jesse caught a Thames roach which weighed three pounds. Walton thought one of two pounds worthy of special notice. "The Thames," he says, "affords the largest and fullest in this nation, especially below London Bridge."

Punt-fishing for roach by the starlings of Old London Bridge was once a common amusement of the city anglers, which they continued to enjoy to the end of the reign of George I. Sir John Hawkins, in his edition of Walton's 'Angler,' published in 1760, gives an interesting account of their latter-day exploits. "The Thames," he says, "as well above as below bridge, was formerly much resorted to by London anglers; and which is strange to think on, considering the unpleasantness of the station, they were used to fish near the starlings of the bridge. This will account for the many fishing-tackle shops that were formerly in Crooked Lane, which leads to the bridge.* In the memory of a person not long since living, a waterman that plied at Essex-stairs, his name John Reeves, got a comfortable living by attending anglers with his boat: his method was to watch when the shoals of roach came down from the country, and when he had found them, to go round to his customers and give them notice. Sometimes they (the fish) settled opposite the Temple; at others at Blackfriars or Queenhithe; but most frequently about the chalk-hills† near London Bridge. His hire was two shillings a tide. A certain number of persons who were accustomed thus to employ him, raised a sum sufficient to buy him a waterman's coat and silver badge, the impress whereof was 'Himself, with an angler in his boat,' and he had annually a new coat to the time of his death, which might be about the year 1730." In 1760 Shepperton and Hampton were much resorted to by London anglers for roach-fishing. If the respectable old angler who joyfully put his tackle in order when John Reeves announced a shoal of roach at London Bridge could now see half a dozen steam-boats at one time moving between Queenhithe and Blackfriars (no unusual sight), he would easily conclude that his sport in that quarter was destroyed. But he would not at once perceive all the other causes which had driven the fish away, such as improved sewers disgorging the impurities of treble the population of the London of his day, the increase in a still larger proportion of manufactories, and the establishment of works he never dreamt of, for converting coal into a gas for lighting shops and streets. Turning to one of the Parliamentary Reports on the state of the water supplied to the inhabitants from the river, he would learn by the evidence of fishermen, that since 1820, flounders eels, roach, smelts, salmon, and other fish, had been unable to live in that part of the Thames between Woolwich and Putney. In this Report, issued in 1828, Mr. Goldham, the clerk of Billingsgate-market, states that about twenty-five years ago there were four hundred fishermen, each of whom was the owner of a boat and employed a boy, and they obtained a good livelihood by the exercise of their craft between Deptford and London, taking roach, plaice, smelts, flounders, salmon, shad, eels, gudgeon, dace, dabs, &c. Mr. Goldham states that about 1810 he had known instances of as many as ten salmon and three thousand smelts being taken at one haul up the river towards Wandsworth, and fifty thousand smelts were brought daily to Billingsgate, and not fewer than three thousand Thames salmon in the season. Some of the boats earned 6*l.* a week, and salmon was sold at 3*s.* and 4*s.* the pound. The fishery was nearly destroyed at the time when this evidence was given. The masters of the Dutch eel-ships stated before the same committee that a few years before they could bring their live-eels in 'wells' as far as Gallions' Reach, below Woolwich; but now (1828) they were obliged to stop at Erith, and that they had sustained serious losses from the deleterious quality of the water, which killed the fish. Many other facts might be mentioned to the angler of the old school still more perplexing—of salmon brought from Scotland in ships moved by steam, and in such large quantities as frequently to sell at 6*d.* and 8*d.* the pound; of the supplies of fish from the coast being conveyed to London in three or four hours by railroads; and that by these means fresh fish, once the most difficult commodity to put into extensive circulation, was now regularly sold in the markets of most inland parts of the country not very many hours after being caught.

* Four persons of this craft still have shops in Crooked Lane.

† The depositions from the rubble composing the starlings.

CONDITION OF LABOURERS' TENEMENTS IN ENGLAND.

[From Mr. Chadwick's Sanitary Report.]

EVERY detail of the materials with which the cottage is constructed, and the mode of its construction, deserve, and there is little doubt will obtain, most careful attention, for it is only by considering their comforts in detail that they can be improved, or the aggregate effect on the immense masses of the community can be analyzed and estimated. For example, it has been mentioned that a decided difference is perceptible in the health and condition of workmen of the same class who live in houses made of brick as compared with those living in houses made of stone. A gentleman who has attentively observed the condition of the working classes in the north of Lancashire, and the north of Cheshire, states that the general health of the labourers in the north of Lancashire is decidedly inferior. This inferiority he ascribes to several causes, and, amongst others, to damp cottages, and—"wood and wattled houses, such as our forefathers built, are the driest and warmest of all; brick is inferior in both these requisites of a comfortable house; but stone, especially the unhewn stone as it is necessarily employed for cottages, is the very worst material possible for the purpose. I prefer the Irish mud cottages. The evil arises from two causes. The stone is not impervious to water, especially when the rain is accompanied by high winds; and it sucks up the moisture of the ground, and gives it out into the rooms; but principally, stone is a good conductor of heat and cold, so that the walls cooled down by the outer air are continually condensing the moisture contained in the warmer air of the cottage, just as the windows steam on a frosty morning; besides, the abstraction of heat in stone houses must be a serious inconvenience. The effect of this condensation must be, and is, to make clothes, bedding, &c. damp, whenever they are placed near the wall, and therefore extremely prejudicial to those who wear the clothes or sleep in the beds. Of course I do not attribute all the damp of our cottages in this neighbourhood to the stone; much of it is due to the wet climate, wet

soil, and building so near the ground; but the stone, as a material of building, must bear a considerable share of the blame. I believe, too, it is partly the cause of the very great difference of cleanliness of the Cheshire farming people and ours of the same class. Indeed the Cheshire people were brought up to wooden cottages: brick was of later introduction. The greater facilities and inducements to cleanliness in a dry house would, in the course of time, form a more cleanly people, and superior healthiness would follow."

Mr. Parker observes, that the construction of the cottages in Buckinghamshire is frequently unwholesome:—"The improper materials of which cottages are built, and their defective construction, are also the frequent cause of the serious indisposition of the inmates. The cottages at Waddesdon, and some of the surrounding parishes in the Vale of Aylesbury, are constructed of mud, with earth floors and thatched roofs. The vegetable substances mixed with the mud to make it bind, rapidly decompose, leaving the walls porous. The earth of the floor is full of vegetable matter, and from there being nothing to cut off its contact with the surrounding mould, it is peculiarly liable to damp. The floor is frequently charged with animal matter thrown upon it by the inmates, and this rapidly decomposes by the alternate action of heat and moisture. Thatch placed in contact with such walls speedily decays, yielding a gas of the most deleterious quality. Fever of every type and diarrhœa are endemic diseases in the parish and neighbourhood. Next to good drainage and thorough ventilation, the foundation of a cottage is the most important consideration. A foundation, to be good, must not only be sufficiently strong to bear the superstructure, and of sufficient depth to cut off all connexion with the surrounding vegetable mould and that beneath the floor, but also be formed of materials calculated to resist moisture. The best materials for this purpose are concrete and sound bricks partially vitrified in the kiln or clamp. If such bricks be well laid with mortar composed of sharp sand containing no vegetable substances, and the concrete be free from earthy particles, well mixed and firmly thrown together, the admission of damp will be entirely avoided. Stone, chalk, bricks which are not thoroughly burnt, impure mortar, and wood, have all a tendency to absorb moisture, which, if once received by such materials, ascends, or 'creeps up,' as it is technically called by builders, and thus affects the whole building. To avoid this 'creeping up,' builders are in the habit of placing a tire of slate in foundations above the surface mould—a remedy of a temporary character only, for the action of damp entirely destroys slate. Roman cement has also been used for this purpose, but the sand mixed with this material renders it in some degree porous. It has lately been suggested that a course of well-burnt bricks set in asphalte would effectually prevent this absorption of surface-water, and a favourable opinion of this plan has been expressed by two intelligent architects."

He adds that—"In Berkshire the floors of the cottages are laid with red tiles, called 'flats,' or with bricks of a remarkably porous quality, and as each of these tiles or bricks will absorb half a pint of water, so do they become the means by which vapour is generated. The cleanly housewife, who prides herself upon the neat and fresh appearance of her cottage, pours several pails of water upon the floor, and when she has completed her task with the besom, she proceeds to remove with a mop or flannel so much of the water as the bricks have not absorbed. After having cleansed the cottage, the fire is usually made up to prepare the evening meal, and vapour is created by the action of the heat upon the saturated floor. Thus the means adopted to purify the apartment are equally as injurious to the health of the inmates as the filth and dirt frequently too abundant in the cottages of labouring persons. It is usual to insert in local Acts for the regulation of towns a clause prohibiting the use of straw and similar vegetable substances for roofing; and it appears to me to be desirable that some provision should be made for the rural districts, by which the thatch of cottages, when in a decomposed state, might be required to be removed. In the parishes of Binton, Dorsington, and Long Marston, in the neighbourhood of Stratford-on-Avon, simple continued fever, described to be similar in character to the form of fever which frequently occurs in the autumn and beginning of winter throughout England, prevailed very extensively in the winter of 1839. Of 31 patients attacked by it, seven died. Dr. Thompson of Stratford-on-Avon, the physician who visited all the cases by the desire of the Board of Guardians of the Stratford-on-Avon union, observes:—'As almost all the cottages in which there has been fever are thatched, and the thatch in many of them is in a very rotten and insufficient condition, it is not improbable that slow decomposition in the thatch, from the unusual quantities of rain which have fallen, may have been going on, and contributed to the production and continuance of fever. It has been observed by others, I believe, that it is more difficult to get rid of fever in thatched than in slated cottages.' Dr. Thompson also remarks, that in thatched cottages it is not usual to ceil or plaster the inside of the roof; and he recommends that this should be done, and that the plaster should be lime-washed once a year."

In the course of some observations made on the construction of the cottages of the labouring classes in France, it is observed that—"It is in vain that the workman breathes a pure air out of doors, if on his return to his home he finds an infected atmosphere. Air, which is so necessary to life and health, and which it is of the last importance to renew often, especially in small rooms, remains thick and loaded in the abode of the workman, because no currents can exist in consequence of the window being almost always placed alongside the door. The form of the chimney is another great evil in the construction of country cottages. With a shaft very short and very large, it is impossible for the room to get warm, and the heat produced is almost all lost. This form of the chimneys is only explicable by the ignorance of the constructors. However large a fire may be required by the diverse needs of the family, it does not involve the necessity to make the chimney shaft of a corresponding size; on the contrary, the facility with which the smoke ascends is altogether proportioned to the smallness of the latter, as may be seen in the chimneys of stoves, which are always extremely narrow."

The Rev. C. Walkey, of Collumpton, Devonshire, gives instances of the want of provision for ventilation in the cottages of the labouring classes:—"Cottages for the most part are without sufficient ventilation, particularly in the up-stairs apartment, this being almost invariably without a chimney, with a low window, commonly about two feet from the floor, and having no ceiling, therefore the thatched roof, lofty in itself, and full of cobwebs, contains the foul air; and in several instances I have been the means of restoring health apparently by blowing gunpowder in cases where fever has raged for months, the ground-floors being often damp—very seldom above the level of the land."

PLANTS USED IN DYEING RED.

THOSE who have paid but little attention to the nature of the dyeing process, would scarcely be prepared for the very diverse and heterogeneous ingredients employed by the dyer. There is no particular substance,

whether animal, vegetable, or mineral, called *par excellence* a 'dye:' there is no dye-manufactory, where the various materials for dyeing are prepared; nor is there any particular country to which we are indebted for them. The art of dyeing is the result of a successive accumulation of facts derived from actual experiment, the dyer having searched in every direction for substances which will impart a required colour to a given fabric. The nature of the silken, woollen, cotton, and linen textures, which form the chief objects of the dyer's attention—the two former being of animal and the two latter of vegetable origin—is such as to receive with different degrees of durability the colouring principles contained in the dyeing ingredients; and hence each kind of fabric has in some measure a group of dye-stuffs peculiar to itself, although the grouping is generally made with respect rather to the colour produced than to the fabric dyed. The mineral substances, generally solutions of metallic salts, employed in dyeing, are very numerous, either to impart colour, to brighten the colours given by other substances, or to fix the dye more permanently to the cloth. The animal substances employed are such as the cochineal insect, the kermes insect, and the lac insect. The vegetable substances, however, form the most important series, and are of the most diverse kinds; some being produced from the plant generally, such as orchil, cudbear, indigo, and woad; some from the wood of the plant, such as Brazil-wood, sandal-wood, logwood, and fustic; some from the root, such as madder and turmeric; some from the bark, such as quercitron and birch bark; some from the flower, such as safflower; some from the shoots, as sumach; some from the leaf and stem, as weld; some from the berry, such as arnotto and Persian berries; and some from the juices, as catechu, gall-nuts, &c. Of some of these vegetable dye-stuffs a brief account may not be uninteresting: beginning with those which produce a red colour.

Brazil-wood is the wood of the cæsalpina sapan, cæsalpina crista, cæsalpina vesica, and cæsalpina ecchinata, four lofty kinds of tree growing in Brazil. The wood is very hard, sinks in water, is sweetish to the taste, and rich in colouring-matter, which is pale when the wood is first cut, but becomes redder by exposure to the air. In Brazil the tree has been for many years past a royal monopoly; the exportation of the wood, except on account of government, being strictly prohibited under the severest penalties. Owing to the improvident manner in which it has been cut down by the government agents, it is now rarely found within several leagues of the coast. Indeed it has been asserted that many of the planters have privately cut down the trees on their estates, and used the timber as fire-wood, that they might not expose themselves to the arbitrary and vexatious proceedings of the government agents.

This kind of wood is valuable to the dyer for the various shades of orange and red which it affords when treated with different chemical agents. When boiled in water for some time, the wood furnishes a fine red decoction; and a further portion of red may be extracted from the residue, by the application of alkalies. Alcohol or ammonia will extract a deeper red than that obtained by water. A red precipitate may also be obtained by adding acids, such as the sulphuric and nitric, to the watery decoction. Solutions of alum and of tin are very valuable in connection with the Brazil-wood, for they give a fine red precipitate in great abundance, while the supernatant liquor is red also; and when nitro-muriate of tin is added to the decoction, the whole of the red colouring-matter is precipitated.

Brazil-wood is employed in the manufacture of red ink, and also, but not to a great extent, in dyeing. It has, however, within the last few years been almost superseded by a wood brought from Africa called camwood, which is richer and gives a finer colour than the Brazil-wood.

Logwood is much more extensively employed than the two kinds just alluded to. It is the wood of a tree growing in Jamaica, and on the shores of the Bay of Campeachy, called botanically the hematoxylon Campeachianum. This tree is something like the white-thorn, but a great deal heavier. The wood is hard, compact, dense, and of a deep red colour internally, which it gives out both to water and alcohol. It is brought to this country in logs of about three feet in length, which are reduced to fragments before they are fitted for the use of the dyer. This reduction is effected in one of three ways. One method is by using a machine consisting of knives fixed to a large wheel; the knives chip the wood across the grain into small fragments, which are afterwards reduced to a fine powder by grinding them beneath a pair of rolling-stones. The second method is by a machine provided with steel bars with a great number of notches or teeth at the edges; these rasp and cut the end of the wood into powder. The third mode is by means of a circular saw, which at every cut produces as much logwood sawdust as is equal to its own thickness, and is at the same time so contrived as to shatter into fragments the thin laminæ produced by the saw.

The raspings or fragments of logwood obtained by any of these methods will easily yield their colouring-matter by boiling; and this colour is employed either to dye of a reddish tinge, or to brighten the tints given by some other ingredients, or to effect the former as a preparative to the latter. Dr. Bancroft makes the following observations respecting the dyeing qualities of logwood:—"Logwood seems to have been brought to England soon after the accession of Queen Elizabeth; but the various and beautiful colours dyed from it proved so fugacious, that a general outcry against its use was soon raised; and an Act of Parliament was passed in the 23rd year of her reign, which prohibited its use as a dye under severe penalties; and not only authorized but directed the burning of it, in whatever hands it might be found within the realm. And though this wood was afterwards sometimes clandestinely used, under the feigned name of 'black-wood,' it continued subject to this prohibition for nearly a hundred years, or until the passing of the Act 13 and 14 Charles II., the preamble of which declares that the ingenious industry of modern times hath taught the dyers of England the art of fixing colours made of logwood, alias 'black-wood,' so as that, by experience, they are found as lasting as the colours made with any other sort of dyeing-wood whatever; and on this ground it repeals so much of the statute of Elizabeth as related to logwood, and gives permission to import it and use it for dyeing."

Of all the vegetable substances produced in dyeing red, perhaps the most valuable is madder at least for cottons and linens, to which it has been applied for many centuries. In our last volume the general characters of the cochineal and the lac insect were described, so far as relates to their use in dyeing red colours; and with the exception of those, perhaps madder ranks next in importance. It is the root of the rubia tinctorum, a plant extensively found in the south of Europe, Asia Minor, and India; and from those countries introduced into Holland and France. Its cultivation has been attempted in England, but without any beneficial results; and our supplies are now obtained from Holland, France, and Turkey. The roots are long and slender, varying from the thickness of a goose-quill to that of the little finger;

they are semi-transparent, of a reddish colour, have a strong smell, and a smooth bark.

The madder plantations of Holland are thus conducted:—In autumn they plough the land and lay it up in high ridges, that it may be mellowed by the winter's frost. In March it is ploughed again, and laid in ridges eighteen inches asunder and a foot deep. Then, in the beginning of April, when the madder begins to shoot out of the ground, they open the earth about the old roots, and take off all the side shoots, which extend themselves horizontally just under the surface of the ground. These they plant immediately on the tops of the new ridges, at about a foot distance from each other; and this they usually do in showery weather, when the plants immediately take root, and require no more water. At Michaelmas time, when the leaves have fallen off, the roots are taken up, and dried for the market. The plant grows to about three feet in height; but it is the long spreading fibrous root which is used in dyeing.

The madder is imported into England either in the state of root, as just described, or in a more advanced stage of preparation. The latter is generally the case with respect to the Dutch madder; and the mode of preparation is as follows:—The roots, as soon as they are gathered, are put under a shed or in a granary or other sheltered place, and there remain exposed to a current of air for ten or twelve days, till they are quite pliable, and till no juice can be pressed out by squeezing them. They are then further dried, either in a common oven of slack heat, if the quantity be small, or in large stoved rooms, constructed for the purpose, and heated with turf. When the roots are quite hard and brittle, they are laid on a threshing-floor, and beaten with a flail, in order to separate the dirt and outer thin skin. They are afterwards ground in a mill, and the powder, being sifted and sorted, is carefully packed in large barrels, and in this state is purchased by the dyers.

In France the cultivation of madder is principally confined to a district of which Avignon is the centre. The prices vary so much, that the cultivation is subject to much fluctuation; for if any cause gives rise to a high price, this induces the agriculturists to devote more of their land to madder, and the increased supply then reduces the price. It is said that, in France at least, the relation between wheat and madder, as sources of profit, is such that when wheat is at 63*s.* per quarter, madder should be at 34*s.* per cwt. to yield the same rate of profit. The Dutch madder, which has a yellowish tinge, is used principally by our woollen dyers; while the redder French madder is in greater request among the cotton dyers. The sifting and sorting which we alluded to as practised in Holland are intended to produce different qualities of madder: thus the 'small' consists of a powder formed by pounding the very small roots and the husk or bark of the larger ones; it is comparatively low priced, and is employed for dyeing cheap dark colours. The 'gamene' is a kind rather superior in fineness and colour. The 'ombro' consists of the interior, pure, and bright parts of the root; and the 'crops' is another variety nearly analogous to it.

Safflower is another vegetable substance yielding a red dye, and the last which we shall notice. It is sometimes called bastard saffron, and consists of the flower of an annual plant growing in India, Egypt, America, and some of the warmer parts of Europe. The flowers, which are sometimes sold under the name of saffranon, are the only parts employed in dyeing. They yield two kinds of colouring-matter: one soluble in water, and producing a yellow of but little beauty; the other soluble in the fixed alkalies, and affording a red colour equalling in delicacy and beauty that obtained from cochineal, but much less permanent. The colour of safflower will not bear the action of soap, nor even that of the sun and air for a long time; and being very costly, it is principally employed for imitating upon silk the fine scarlet and rose-colours dyed with cochineal upon woollen cloth.

The safflower has been occasionally cultivated in Germany and France, and the process of culture is said to be as follows:—It is sown in the lightest land, which has always a double fallow given to it, first to destroy the weeds, and afterwards to make it fine. After it has been fallowed a summer and a winter, and has been ploughed and harrowed four times, it receives its last ploughing and harrowing in the latter end of March. The seeds are then scattered thinly in drills about a foot and a half from each other, and the earth is drawn into them with a short-toothed arrow; and a roller is passed over the ground to smooth and to settle it. After the plants have come up, they are hoed three times at intervals of five or six weeks; and as soon as the flowers begin to open, the field is gone over once a week to gather such as are ready. There is usually a succession of flowers for five or six weeks, and these are gathered at such times when there is no dew on them.

Hasselquist describes the Egyptian mode of preparing the flowers for use thus:—After being pressed between two stones, to squeeze out the juice, the flowers are washed several times with salt-water, pressed between the hands, and spread out in the open air to dry. In the day-time they are covered, that they may not dry too fast with the heat of the sun, but they are left exposed to the dew of the night. When they are sufficiently dry, they are packed up for sale. Dr. Thomson states:—"From the colouring-matter extracted by means of an alkali, and precipitated with an acid, is procured the substance called *rouge*, which is employed as a paint for the skin. The solution of carthamus (the botanical name for the safflower) is prepared with crystals of soda, and precipitated with lemon-juice which has stood some days to settle. After being dried on delft plates by a gentle heat, the precipitate is separated, and ground accurately with talc which has been previously reduced to a very subtle powder, and on the fineness of the talc depends the difference between the cheaper and dearer kinds of rouge." This rouge appears to be the real colouring-matter of the dye for which the safflower is used by the dyer.

There are a few other plants useful in dyeing red, but the above are the most important. Orchil seems rather to be ranked as a blue or purple than a red dye.

Curious Means of knowing the Position of a Ship in Foggy Weather.—There is a provision there (at Holyhead) for the safety of the packets which attracted my attention, from never having known anything of the kind in my life. The Stag Rock, on which the lighthouse is built, is connected with the mainland by a chain bridge. I was surprised at the number of sea-fowl upon the rock, and asked why they congregated in such numbers, and were regularly fed every day. The harbour-master told me that they were objects of his care and anxiety; for that when the packets in foggy weather could not make out any land, and finding by their lead they were close to the shore, they were in the habit of firing a gun, and at the report the sea-fowl flew up screaming, and thus indicated the position of the packet instantly. I tried that experiment when I was there, and found it answer inimitably.—*Evidence of Captain George Evans, R.N., before the Parliamentary Committee on Post-Office Communication with Ireland*—Session 1842.